

A New Angle to Solving Solar Control Problems



All photography: Barry Rustin, Evanston, IL

The University of Chicago Lab School had a problem. The school was building a brand new arts facility, the Gordon Parks Arts Hall, funded in part by a donation from the George Lucas Family Foundation. It was a high-profile project, making use of daylighting.

University of Chicago Lab School
Chicago, Illinois

E-Screen 3%
Charcoal/Gray

“They had a beautiful façade design with unique angles and breaks in the glass,” explained Clint Childress, LEED® AP, solar control solutions product manager at Draper, Inc. “With this design, they had a problem with finding any solar shading that would work.”

Bryan B. Biggers III, president of Beverly Venetian Blind Company, agreed it was a complex project.

“We weren’t the only people asked to bid on this project but we seemed to be the only ones that were willing to take on the complexity of this project with its unique angled windows,” Biggers said. “It’s something we had never done before, but I felt that it would be a great opportunity to do something very special even though we really didn’t know how we were going to accomplish it.”

Biggers and his team talked to the designers in charge of the project to share some ideas on how to develop a solution.

“This is where my thoughts went straight to Draper,” he said. “I knew that if anyone could help pull this off, it would be Draper.”

Biggers’ request came to Draper’s Solar Control Solutions (SCS) division, which designs and manufactures custom solutions for customers around the globe.

“The Fabric used was the E-Screen 3% Charcoal/Gray. This choice was made for performance as well as aesthetics. Their first choice was a lighter color that was selected. After consultation with our client we changed the color to achieve both concerns.”

Bryan Biggers

This beautiful facade features unique angles and breaks in the glass. The problem was finding any solar shading that would work.



“SCS is about bringing solutions to solar shading problems,” Childress said. “There may be too much heat gain, a unique glazing design, an operation that is not standard, or anything that makes standard products not an ideal option.”

Draper’s designers discussed the project with Biggers and, after several conversations, proposed a solution. After some back-and-forth exchange of ideas and on-site meetings, a final design was agreed upon: a custom motorized shade system on tracks, with re-directional rollers to help the shades follow the changes in slope. The shades would be operated via wall switch, and feature Mermet E Screen Charcoal/Gray with a 3% openness factor.

“The design process with Draper was very interesting,” Biggers said. “As you can imagine they had quite a challenge on their hands. Draper hadn’t done this type of project before, and neither had we.”

The custom solution was actually based on Draper’s Motorized FlexShade® and Skylight 2. One of the biggest challenges for the Draper design and production teams was the different brackets required.

“With the changing break-line in the curtain wall glass per shade, each shade was slightly different. Different length tracks (both left and right side for each shade), different length brackets, and different numbers of brackets,” Draper’s director of engineering Harold Seib said. “Another issue was bending the side channels/tracks. We used 3D engineering rapid prototyping machines, and developed a process using printed plastic inserts that allowed us to use a gym equipment tubing bender to bend u-channel.”

The project continued to be challenging as installation got underway. Biggers’ crew had to make some on-site adjustments and fabrication changes because as they moved across the

glazing it soon became apparent that there were changes with the angles.

“At some points, it was a hot mess but we knew that it was going to come together in the end and be pretty spectacular,” Biggers said. “Draper did a great job as I knew they would and I know that it was a learning experience for them as well as for us.”

Biggers has returned since the initial installation to make a few adjustments and said the Lab School is extremely happy with the unique shading solution.



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